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Change in the Perception of the Poverty Line during Times of Depression

Russia 1993–96

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Russia experienced a precipitous drop in real income from March 1993 to September 1996. As the percentage of the "objectively" poor (those with income below the official poverty line) increased, the percentage of the "subjectively" poor (those who felt poor) decreased. Perception of the subjective poverty line went down even faster than real incomes.

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Summary findings

During Russia's economic transition real income declined precipitously for most of the population. How were Russians' perceptions of the minimum income level needed to survive affected by such a rapid decline in their incomes?

Based on data collected from repeated surveys of individuals during the period from March 1993 to September 1996, Milanovic and Jovanovic find that the subjective estimate of that minimum income for an adult Russian decreased by about 1.7 percent each month.

This sharp reduction in the subjective poverty line meant that proportionately fewer people felt poor. However at all times at least 60 percent of the population considered itself poor.

In other words, the percentage of the "subjectively poor" tended to decline as the perception of the needed minimum was reduced. In this somewhat unusual situation, the percentage of the subjectively poor decreased more or less in step with a reduction in people's real income. Only larger-than-usual income decreases were needed to jolt the population — that is, to keep the percentage of the subjectively poor unchanged.

The percentage of the self-assessed poor was always lower than the percentage of the poor according to the "social" subjective poverty line. This suggests that pockets of the population regarded their own income as adequate although in the public perception they were poor.

This in turn suggests two mechanisms for adapting to worsening circumstances: 1) a reduction in what people perceive to be the minimum income needed for survival and 2) the existence in the population of pockets of people who demand even less than others.

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CHANGE IN THE PERCEPTION OF THE POVERTY LINE DURING THE TIMES OF DEPRESSION: RUSSIA 1993-96

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Introduction

In the course of its transition to a market system, the Russian economy has experienced a series of shocks. It has experienced a sharp fall in output: its 1997 GDP is almost a third less than it was ten years ago. It has suffered from rapid and continuing inflation: over the period under study here (March 1993 to September 1996), the price level increased 46 times. It has witnessed the appearance of open unemployment, affecting some 10 percent of the labor force by 1997. Real wages and pensions have declined by a half compared to their pre-transition levels, and delays in their payment have become endemic. A few, who have either been enterprising and lucky, or politically well-connected, have amassed considerable fortunes. As a consequence, income inequality has increased by an unprecedented speed (the Gini coefficient has risen four to five times faster than it has during the 1980's in the United States[2]), as has the number of families living in poverty.[3]

Against the background of such rapid, and economically, generally unfavorable developments, the population's views about what constitutes poverty, and what it considers to be a minimum income "needed to make ends meet", must have evolved as well. Because the decline in income was sharp, it enables one to see, within a very compressed time period, how conceptions of wellbeing and deprivation respond to abrupt changes in income. For most people in most countries, these factors remain relatively constant over considerable periods of time. It is therefore difficult to observe the impact of changes in external circumstances on the formation of attitudes or expectations. The Russian experience allows us to explore the impact of abrupt changes in circumstances. In addition, the question of what the population views as a minimum acceptable income has obvious political implications: if most of the population feels poor, it is unlikely to support the reforms. This paper will explore how the perception of the poverty line, among the population as a whole, has changed in Russia over the period 1993-96.

Section 1. The Model: Estimating the Subjective Poverty Line

In the literature on the subjective-welfare estimation the usual specification defines the minimum income necessary for a family (MY_f) to make ends meet as a dependent variable,[4] and, in its most parsimonious formulation, total household income (Y_f) and family size (n), as explanatory variables (e.g. Hagenaars and van Praag, 1985; van Praag and Van der Saar, 1989).

$$\ln MY_f = fct(\ln Y_f, \ln n) \qquad (1)$$

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[2] See Milanovic (1998, p. 40ff).

[3] See, for example, Braithwaite (1997), Glinskaya and Braithwaite (forthcoming), Milanovic (1998), Lokshin and Popkin (1998), Ovcharova, Turuntsev and Korchagina (1997).

[4] MY_f may be considered a point on a household cost function related to a specific welfare level u_{min}.

The minimum income necessary for a family to make ends meet is obtained from the so-called Minimum Income Question (MIQ) such as "what do you consider as an absolute minimum net income (per period of time) for a household such as yours?" (see Flik and van Praag, 1991, p.320).

Obviously, the family size influences positively the minimum income or its "subjective poverty line" (SPL)—the terms will be used interchangeably. In addition, the actual level of family income, which may be regarded as a proxy for family's "permanent income", influences positively SPL. The rationale is that families accustomed to a higher standard of living will, everything else being the same, have higher aspirations and hence higher estimate of what "their" minimum income is. This was termed by van Praag (1971), "the preference drift", and its value, in a double-log formulation such as (1), will lie between 0 and 1. If the preference drift equals 0, then the subjective poverty line becomes an absolute poverty line. At the other extreme, when the preference drift is 1, every increase in real income "exacts" the same percentage increase in what is perceived to be the poverty line. The poverty line then becomes fully relative. Not surprisingly, most research has yielded the values of the parameter drift between 0.4 and 0.7 (see, e.g. Flik and van Praag, 1991, p. 325; van Praag and Flik, 1992, p. 10) which accords well with our intuitive perception that as people get richer they set the necessary minimum higher, but do not raise it (in percentage terms) as much as their income goes up.

Answers to the MIQ will yield a number of observations such as in Figure 1. We fit the regression based on these observations, and the intersection of the regression and actual income Y_f (see point A in Figure 1), is defined as the "social" subjective poverty line. To see why this is so, notice that households to the left of A have an income that is below the regression line (that is, less than "society" deems needed). They are considered poor. On the other hand, all those lying to the right of A are not "socially" considered to be poor since their actual income is above the regression line—even if they may consider themselves to be poor (e.g. their required minimum income may lie at C, much above their own income).

If we then write out (1) in log-linear form,

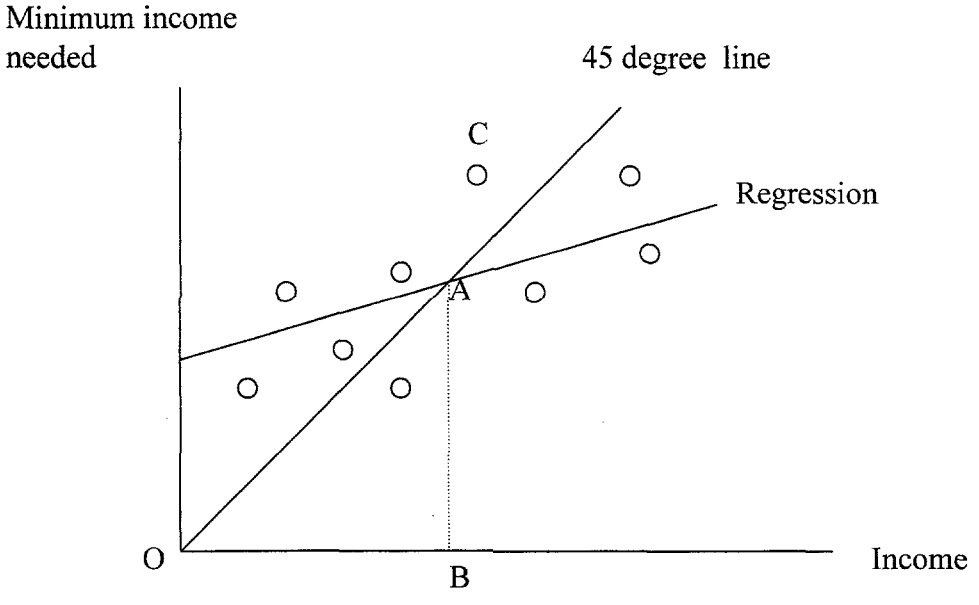
$$\ln MY_f = \beta_0 + \beta_1 \ln Y_f + \beta_2 \ln n$$

and let $MY_f = Y_f$,

$$(1 - \beta_1) \ln Y_f = \beta_0 + \beta_2 \ln n \qquad (2)$$

The elasticity of family size with respect to subjective poverty line (i.e. parameter θ in the expression of the equivalent income, Y/n^{θ}) becomes $\dfrac{\beta_2}{1-\beta_1}$.

Figure 1. Determining the social poverty line



The VCIOM (All-Russian Center for Public Opinion Research) data set available to us (see the discussion of the data set in Section 2), however, does not contain precisely the MIQ as explained above. Instead of asking the household head for his/her opinion on the minimum income for the *entire family*, the enumerator asks the question, "*What income, in your opinion, constitutes the subsistence minimum per person at the present time?*" This is a very general minimum income question, asking in effect for the household's view as to the minimum income for an adult (since *person* is likely to be interpreted as an adult person)—not what would be the minimum income per person for that family.[5] This problem does not allow us to apply the theory sketched above in a straightforward fashion, but to use an alternative approach.

Equation (3) shows the effective formulation based on the question as asked. We also introduce other control variables that may be relevant.

[5]If the latter were the case, the problem could be easily solved. If respondents are rational, there is no difference between asking them what is the minimum total income for their family and the minimum per capita income for *their family*. The answers to the latter could then simply be multiplied by the number of family members to obtain the minimum *family* income.

$$\ln AMY = fct(\ln Y^*, age, age^2, SETTLEMENT, REGION, time) \qquad (3)$$

AMY represents answers to the minimum income for an adult question, Y* the "true" income level of the household (i.e. income per equivalent adult of a household); age of the respondent; size of the settlement, and region where the family lives.[6] The crucial is "true" income variable. In trying to find out how people perceive, depending on their income, what is the minimum income for an adult in Russia, we have to find income Y* such that it accurately reflects household's economic welfare. This clearly is unlikely to be total family income since it does not take into account the number of people who share it. It could be a per capita income, or an income per equivalent adult which accounts for economies of size. Therefore Y* is defined as Y/n^{θ} where θ is a parameter for economies of size ranging from 0 (full economies of size) to 1 (no economies of size or per capita measurement). The problem is, of course, how to determine the right θ. We argue that the right θ (θ^*) will be the one which would make the sign of the household size (*n*) variable introduced as an additional control in (3) statistically not significantly different from zero. The rationale is as follows. Once we identify the "true" household income, there is no reason why household's size or family composition will matter at all for what people regard as the minimum income for an *adult* in Russia. We shall therefore try different values of $Y(\theta^*)$, and choose the $\theta=\theta^*$ that makes the coefficient on ln *n* in equation (3) equal to zero. Note also that for values $\theta<\theta^*$, we expect the coefficient on ln *n* to be negative, because large households' economic welfare is overestimated (they are not as rich as they seem). Their estimate of the minimum income (*AMY*) is therefore systematically biased downward, which in turn leads to a negative correlation between *AMY* and ln *n* and a negative regression coefficient. For values $\theta>\theta^*$, the opposite is true and we expect the regression coefficient to be positive (see Figure 4 below).

Including the *age* and age^2 variables accounts for the life cycle (parabolic) effect whereby the perceived needs increase until they reach a peak, and decrease thereafter. Since this variable captures the age of the respondent (not necessarily the age of the household head; see below Section 2), one must be careful with its interpretation.

We capture the importance of the environment on the perception of poverty line by introducing the variables for the size of settlement and regional location. People living in big cities or richer regions (e.g. Moscow, St. Petersburg) will face higher prices and would be expected to pitch their poverty line higher. [7] The social reference (demonstration) effect may also be important in larger cities, as people seeing the wealth of others come to expect more. Living in a harsh climate might also increase one's perception of the necessary minimum income.

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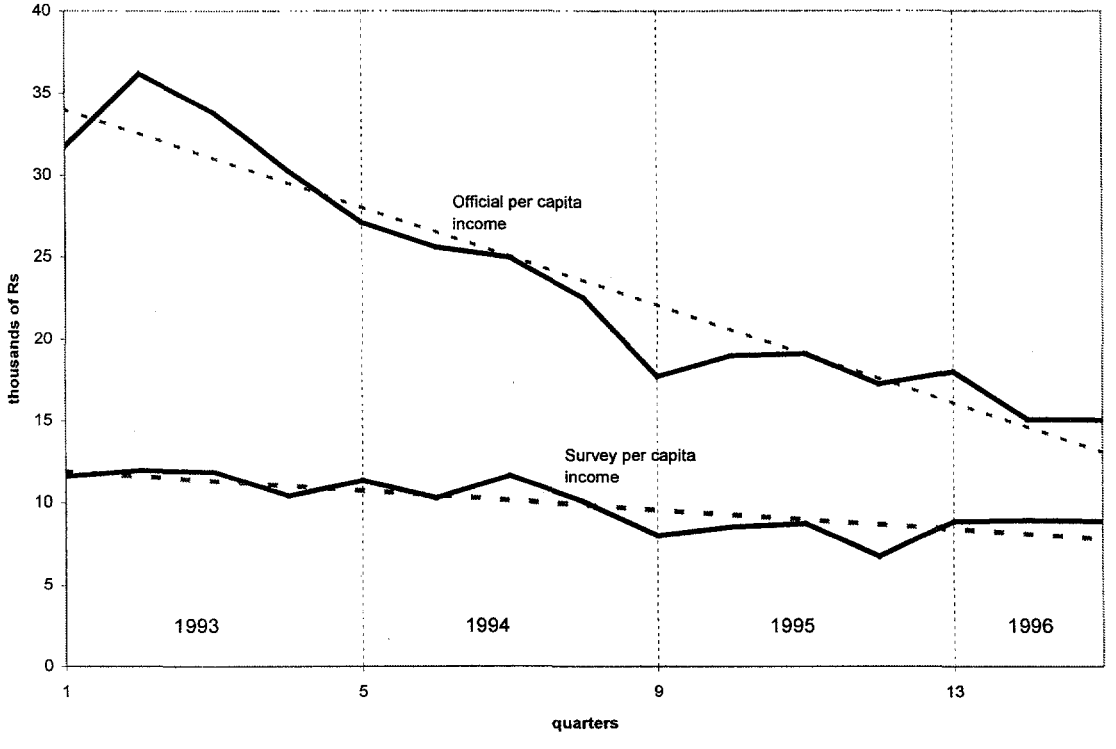
[6] The dummy variables in (3) are written in upper case.

[7] Our data base is not deflated for regional price differences since regional CPIs are not available.

Finally, we introduce *time* in our model in order to capture the change in the perception of the poverty line over time. Our hypothesis is that the subjective poverty line will decrease as time passes on and people adapt to the new and worse conditions, and adjust their expectations accordingly. The period covered by our data spans 3½ years, from March 1993 to September 1996, during which time the Russian population experienced a severe decline in real income. The decline is estimated at 14 percent based on our Survey results or almost 20 percent based on official (*Goskomstat*) monthly estimates of population income over the same time period (see Figure 2). [8] The question we ask is whether, in addition to the income effect, the mere passage of time, and realization of seemingly ever worsening circumstances, will lead the public to scale down its expectation of what the minimum "tolerable" income is. As the adaptation to the less fortunate circumstances proceeds, we would expect that the time variable will enter negatively in equation (3).

Figure 2. Real population income, Q1/1993 to Q3/1996
(in constant March 1993 roubles; per capita; per month)



Sources: Survey per capita income calculated from VCIOM surveys. Official per capita income from monthly *Goskomstat* statistics.

[8] Figure 2 also allows us to note that VCIOM Survey underestimates incomes by about 40 percent compared to the official data, but also that the underestimation diminishes with time. Most of the difference is due to the omission of income in kind from the Survey data.

Section 2. The Data

We use the twenty-nine cross-sectional VCIOM (*All-Russian Centre for Public Opinion Research-VCIOM* in its Russian abbreviation) data sets covering the period from March 1993 to September 1996. The survey is a representative sample of Russian households conducted monthly (between March 1993 and January 1994) and approximately every second month since. Although most of the questions in the Surveys are concerned with the household (family), there were questions that targeted individuals. These variables include, among others, gender, age and education. In most surveys, such questions are targeted specifically to the head of the household. Here, however, the respondent is not necessarily the household head. The fact that the respondent need not be the household head might have an adverse effect on the accuracy of some data (for example, the respondent may not be fully aware of all the components of household income).

The original data set consisted of 91,090 observations spread over 29 cross sections. The number of observations was reduced to 80,826 after omitting the observations that did not contain information on family income (total or by components). When the incomplete observations were omitted, individual cross sections contained between 3,626 (January 1994) and 2,034 (September 1996) observations. Although the reduction of the sample size over time was considerable it did not, according to the VCIOM staff, affect the representativity of the sample. The sampling procedures used were improved.[9]

The basic characteristics of the households and respondents surveyed are given in the Annex 2. The total family income variable was computed as a sum of income components: main income and income from the second job, income from private sector activities, pensions, other social transfers (family allowances, unemployment benefits, sickness benefits etc), stipends, alimonies, income from financial papers, income from sale of self-produced goods, and other monetary incomes.[10] The all Russia monthly CPI, with March 1993 as a base, was used to deflate all the monetary variables. We assume that the inflation affects all regions equally since regional CPIs are not available.

In real terms, the subjective minimum income for an adult (AMY) decreased dramatically between March 1993 and September 1996. It started by being higher than Rs. 35,000 in the early surveys and ended with Rs. 15,000 (see Figure 3).[11] The Ministry of Labor official minimum income for an adult (the *prozhitochnyi minimum*) remained constant in real terms at some Rs. 10,000.[12] The gap between the two therefore steadily

[9] I owe this information to Jeanine Braithwaite.

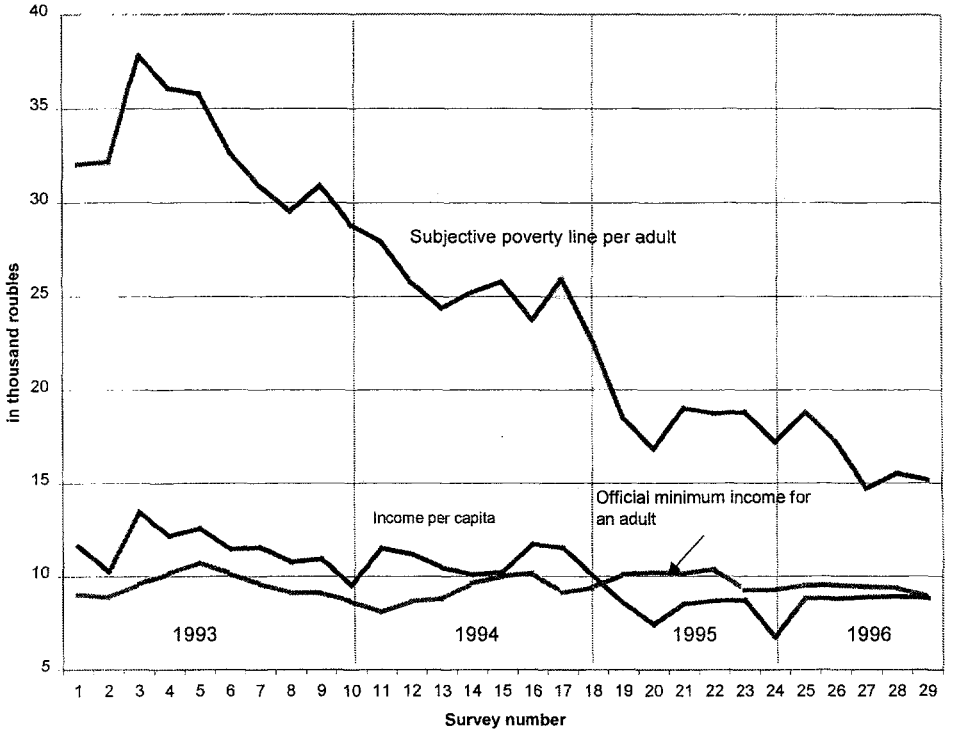
[10] For details on how total family income variable was constructed see Annex 1.

[11] Calculated as an individual-weighted average of AMY's over all households See Annex 3 for more details.

[12] The official minimum is composed of a given bundle of food and non-food goods. Its slight oscillations around Rs. 10000 at March 1993 prices are due to the fact that the CPI that we use to deflate the

diminished. At the beginning of the period, the average subjective minimum income for an adult was 3 and ½ and even four times *higher* than the official minimum; at the end of the period, the ratio was 1.7. The public perception of the minimum income for an adult Russian thus gradually became closer to the official minimum.

Figure 3. The average subjective poverty line for an adult, the official poverty minimum for an adult, and average per capita income (per month; in March 1993 roubles)



Note: Number of survey given on the horizontal axis. Survey years shown immediately above. The average subjective poverty line for an adult is the simple individual-weighted average of poverty lines (AMY) in the surveys; the official poverty line for an adult is *MinTruda Rossii* all-Russia official poverty line; the average per capita income is the average income from VCIOM surveys (same as in Figure 2).

The composition of the households, as well as the demographic characteristics of the respondents, stayed roughly the same over time (see Annex 2 and Annex 3). The average household, over the entire survey period, consisted of 3.1 members, with 0.7 children. For comparison, according to the all-Russia official statistics for 1994, the average household size was 2.84 members (Goskomstat Rossii, 1995, p.28). The average age of the Survey respondent was 42.7 years, and he/she spent 11.2 years in school.[13] 59.2 percent of

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nominal monthly values of the official minimum might have at times increased faster or slower than the cost of the minimum bundle of goods.

[13] The average duration of schooling of the population over 15 years of age calculated from the 1993 Russian Living Standard Monitoring Survey (RLMS) is a little over 9 years.

the respondents were women; according to the official 1995 statistics, women accounted for 53 percent of the Russian population.

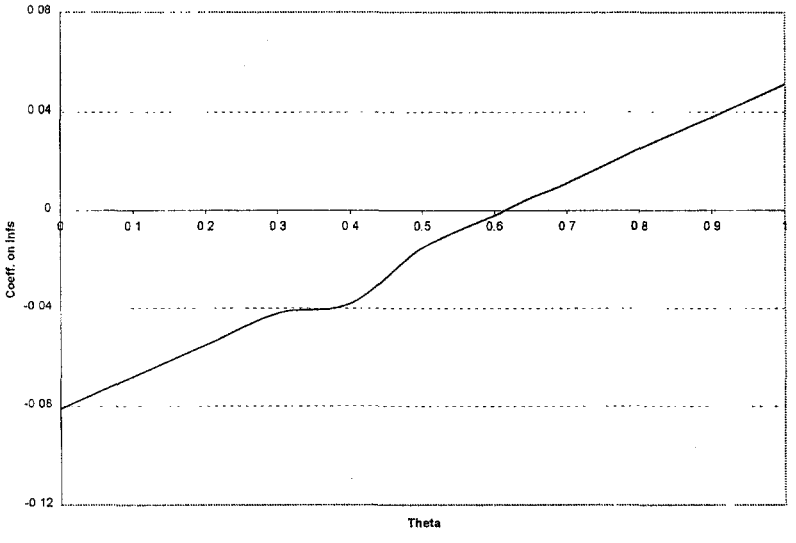
Most of the respondents (76.5 percent) lived in urban areas, a percentage quite close to the official 1995 statistics (73 percent). A plurality of respondents (46 percent) lived in cities with the population less than 100,000, followed by 25.1 percent of those who lived in cities with the population over a million. [14]

[14] In order to indicate the existence of possible outliers in the data, and especially in the variables total family income (*Yf*), and *AMY*, we create "flag" variables *out1*, *out2* and *out3*. All three variables were computed for each cross section separately. Variable *out1* takes value 1 if variables *Yf* and *AMY* both exceed mean plus 5 standard deviations, and zero otherwise. Using this rule the total of 701 observation (0.87 percent of the entire sample) was flagged as outliers. Variable *out2* is equal to 1 whenever variables *Yf* and *AMYf* both exceed the corresponding upper confidence limit of 99.5 percentile, and zero otherwise. The total of 350 observation (0.44 percent of the entire sample) was flagged as outliers. Finally, we use the method developed by Hadi (1992; 1994) (using the *hadimvo* procedure in STATA) to compute the flag variable *out3*. The total of 2,634 observations is identified as possible outliers, which represents 3.28 percent of the total sample. While the results turned to be robust for the exclusion of the observations (households) flagged by *out1* and *out2*, they are somewhat sensitive when the observations flagged by *out3* are excluded.

Section 3. Estimating the Subjective Poverty Line in Russia

We first try to estimate the "true" household income using different values of θ. To do so, we run the basic model (3) including in addition to the variables shown there *ln n*, as the control variable for household size. Figure 4 shows how the coefficient on *ln n* changes as θ in Y(θ)* varies from 0 to 1. For θ=0.62, the coefficient becomes equal to zero.[15]

Figure 4. Coefficient of *ln n* as function of the economies of size parameter



We then move to the direct estimation of equation (3) using $Y^*=\frac{Y}{N^{0.62}}$. The results are shown in Table 1. All the regressions are run with Huber (robust) variances to adjust for the fact that the observations are drawn from different time-clusters (that is, from the 29 surveys) and that variability of observations within each survey is less than if all observations were drawn at random from the population at large. [16] Nevertheless, as the t-values in Table 1 show, practically all the coefficients are significant at probability far greater than 99 percent.

Elasticity of the subjective poverty line for an adult with respect to income is 0.144 for the overall sample and 0.132 in a regression that excludes Hadi outliers. [17] This

[15] It is statistically insignificantly different from zero for a few other values around 0.6, but takes its lowest values for θ=0.62.

[16] That is, the variability of observations from the pooled cross-sections is less than if all 80,000 of our observations were drawn from one cross-section.

[17] As mentioned before, the exclusion of other outliers (*out1* and *out2*) does not have an effect on the results and is not shown here.

is a significantly lower value than reported by Frijters and van Praag (1994) in their study of the former Soviet Union and Russia. For Russia in 1993 and 1994, Frijters and van Praag, report the preference drift value of 0.62 and 0.64 respectively (somewhat higher than the value they find for the Soviet Union in 1991: 0.41). However, these results are not entirely comparable. Frijters and van Praag used a variant of the so-called income evaluation question (IEQ)[18] in order to obtain the left-hand side variable ("the Leyden poverty line"), while in our case we have as the dependent variable what people consider to be a minimum income for an adult.

Our preference drift is also significantly lower than the value found in some Western countries. Flik and van Praag (1991, p.327), for example, report for the Netherlands a preference drift of 0.59; Hagenaars and van Praag (1985, p.151) report for a collection of West European countries a coefficient of about 0.54. A part of the difference may be due to a "richer" choice of control variables included here (regional and size of settlement dummies) as well to the introduction the time variable. In effect, if we run a very parsimonious formulation such as (1),[19] which is basically what Hagenaars and van Praag (1985) do, the preference drift increases from 0.14 to 0.23.

This latter value (0.23) is almost identical to the preference drift obtained by Ravallion and Lokshin (1998, p.30). They use what they dub the Economic Ladder Question (ELQ) whereby individuals rank their own subjective level of living going from 1 (the poorest) to 9 (the richest). The rankings are, like in the rest of the subjective poverty literature, explained by the underlying differences in real income. The sample they use is a representative sample of the Russian population in 1996 and is obtained from a different survey than ours (the Russian Longitudinal Monitoring Survey).

The fact that two independent studies, using two different surveys, come with very low values of the preference drift for Russia requires explanation. There are, we believe, two possible explanations. The first is the difference in formulations. It is possible to imagine that people's views will vary less with income when they are asked what they consider to be a minimum income for an adult in general (as in VCIOM survey) than when they are asked what is the minimum income for their own family. In the latter case, poor people may pitch their minimum fairly low, while the rich may find it hard to imagine living without a relatively high income. For an abstract (adult) individual

[18] Under Income Evaluation Question methodology, a respondent is asked to write down what level of income his/her family would consider to be "very bad", "bad", "middling", "good" and "very good". The mean of the five answers is defined as the Leyden poverty line. (More on the methodology, see Hagenaars and van Praag, 1985; Flik and van Praag 1991). In addition, Frijters and van Praag (1994) upgraded the reported family incomes in order to take into account unofficial sources of income, again based on respondents' subjective perception of importance of informal income sources. Finally, a very high number of households (e.g. 2,668 out of 8,979 in the year 1991) were simply deleted from the sample due to missing observations, and the rest of the sample was reweighted (although the details are not given). It would thus appear that, possibly because the quality of the survey was wanting, a large degree of ad-hoc adjustments was made.

[19] Without a control for household size, for the reasons explained above.

in a country, their opinions may not be so far apart. Second, a low preference drift may also suggest a relative *homogeneity* of people's perceptions, as people on the top of the income scale do not evaluate the minimum income needed "to make ends meet" so much higher than the poor. The homogeneity, in turn, can be explained by the relatively recent "explosion" of income inequality which means that people who had more or less same incomes only recently will not suddenly diverge very much in their perception of the poverty line. Clearly, in countries (as in Western Europe) where income differences have historically been greater and where income mobility was less (in the sense that people with current high incomes probably had high incomes five or ten years ago), the perception of the poverty line may differ significantly between the rich and the poor. But in a country, like Russia, which, until recently was very egalitarian, and was then subjected to an almost random and huge income shock, which made some people's income increase manifold and other people's incomes drop significantly, perceptions of the minimum income would still be relatively similar.

The economies of scale parameter (θ) is, as mentioned before, 0.62. This result too is in sharp contrast with Frijters and van Praag (1994) finding. They report elasticity of the family poverty line with respect to household size to be 0.2. They claim that this low value (compared to Western Europe) "reflect[s] the relatively cheap and good facilities for child care in the USSR, still existing in 1991" (1994, p.10). However, they do not mention that θ is composed of two elements. One is economies of size, that is, how minimum needs increase with the number of household members (regardless of whether they are children or adults). The second element is the cost of children. Now, while the low cost of child care might have pushed θ down under the socialist regime, the first, and a more important element, economies of size, pushed it up (see Lanjouw, Milanovic, and Paternostro, 1998). This is because public or semi-public goods, like utilities, rent etc. were cheap relative to private goods. The share of spending on public goods was routinely much below the corresponding values in market economies (e.g. rent spending accounted for a few percents of total expenditures, while its share in market economies is 15-20 percent). As shown in Dreze and Srinivasan (1995, p.27), the parameter for the economies of scale is bounded from above by the share of spending on private goods. Since this share was high in socialist economies, so must have θ. This can be understood intuitively too: if public goods are practically free and households spend their income only on food, there would scarcely be any economies of size. Thus, Frijters and van Praag (1994) contention that a low θ in the USSR is appropriate is wrong.

However, again, our economies of scale parameter is not much different from the one reported in Ravallion and Lokshin (1998). In the already mentioned study, they find the economies of scale parameter to be 0.42 (Ravallion and Lokshin, 1988, p.30) with a standard error of 0.148.

Table 1. Regression results

Dependent variable:ln subjective minimum income for an adult (AMY)				
	(1) Basic equation with Huber (robust) variances	(2) = (1) without Hadi outliers	(3) = (2) with Gini coefficient	
Ln equivalent income (Y^*) 1/	0.144 (24.0)	0.132 (22.3)	0.132 (22.3)	
Age	0.016 (14.0)	0.017 (17.1)	0.017 (17.1)	
Age^2	-0.0002 (-18.9)	-0.0002 (-20.5)	-0.0002 (-20.6)	
Small towns and villages (popul. Under 100,000)	-0.062 (-4.2)	-0.065 (-4.3)	-0.066 (-4.4)	
Towns (between 100,000 and ½ million)	0.064 (4.0)	0.056 (3.4)	0.056 (3.4)	
Medium size cities (between ½ and 1 million)	0.058 (4.7)	0.059 (4.8)	0.0.58 (4.9)	
Northern region	-0.243 (-12.0)	-0.220 (-11.7)	-0.223 (-10.7)	
Central and Black Earth	-0.330 (-13.9)	-0.307 (-13.0)	-0.311 (-10.9)	
North Caucasus	-0.225 (-5.7)	-0.210 (-5.6)	-0.210 (-5.5)	
Volga-Vyatka	-0.324 (-13.1)	-0.291 (-12.3)	-0.295 (-10.6)	
Volga	-0.256 (-6.9)	-0.236 (-6.9)	-0.239 (-7.0)	
Urals	-0.194 (-7.8)	-0.179 (-7.5)	-0.182 (-6.7)	
West Siberia	-0.150 (-6.4)	-0.131 (-6.0)	-0.132 (-5.6)	
East Siberia and Far East	0.035 (1.6)	0.030** (1.4)	0.028** (1.3)	
Time	-0.017 (-17.7)	-0.017 (-18.0)	-0.017 (-17.3)	
Regional Gini coefficient (by survey)			-0.054** (-0.4)	
Constant	2.889 (82.7)	2.822 (97.8)	2.847 (40.0)	
Sample size	79,595	76,965	76,965	
R^2 (adjusted)	0.189	0.191	0.191	
F value	210.6	246.9	243.4	

Note: t-values given in parentheses (under the coefficients). All coefficients are significant at the 1 percent level, except those with * which are significant at the 5 percent level, and ** =not significant.

For size of settlement, the omitted category is larger cities (population over 1 million). For the regions, the omitted variable is Moscow-city. 1/ Defined as $Y/N^{0.62}$.

The parabolic age effect implies that the subjective poverty line rises with age until a certain point, after which needs decrease. The peak obtains at around 40 years of age, some 4 ½ years later than reported by Frijters and van Praag (1994, p. 11). However, since the variable captures respondent's age, it may not be representative of the household age composition.

The dummy variables adjust for the size of the settlement where the family lives, and region. For the size of settlement, the omitted category is larger cities (with over 1 million population). The subjective poverty line is lower in small towns and villages. Surprisingly, the perceived minimum income for an adult is *higher* in towns and medium size cities than in the very large metropolitan areas. We would expect that the "needs" increase monotonically with the size of settlement, be it because the cost of living is higher or the demonstration effect is greater. The absence of this regularity for the large metropolitan areas may be due to the fact that some of the effect is picked up by the regional variables.

For the regional variables, Moscow-city is the omitted category. Of course, subjective needs in all other regions except East Siberia and Far East are less than in the city of Moscow.[20] Compared to Moscow, the subjective poverty line is lower (under *ceteris paribus* conditions) by between 13 percent in West Siberia, and 30 percent in Central and Black Earth and Volga-Vyatka regions. In East Siberia and Far East, the subjective needs are about the same as in Moscow. High poverty line in East Siberia and Far East is explicable by the harshness of the climate (which requires higher housing and energy expenditures) and its remoteness which means that prices of consumption goods are higher. We discuss the difference between the regional subjective and official poverty lines in Section 4 below.

The variable *time*, measured in months with March 1993 as a starting point, shows how the subjective poverty line for an adult has changed through downscaling of people's expectation.[21] In principle, we would expect this effect to operate through the income variable—lower income would, through preference drift, reduce the subjective poverty line. But in conditions of a rapid decline in real income as in Russia 1993-96, expectations are apparently downscaled even faster. Thus passage of each month (after March 1993) reduced the subjective poverty line by 1.7 percent. After more than three years of depression (by the Fall of 1996), the public's perception of the minimum per

[20] Moscow-city does not include the Moscow region, which is a part of the Central and Central Black Earth region.

[21] An alternative formulation is to use survey dummies. The results are given in Annex 5. Up to August 1993 (survey no. 6), the coefficients are positive, indicating an *increasing* subjective poverty line. Then for a few months they are not significantly different from zero before turning consistently negative, suggesting a decreasing subjective poverty line as time goes on.

capita income was about ½ of what it would have been with the *same* real income in the beginning of the period (Spring of 1993).[22]

Finally, in variant 3 (Table 1), we introduce a measure of income inequality (regional Gini coefficient) to account for a possible increase in the subjective poverty line due to higher inequality—an influence found in Hagenaars and van Praag (1985) and explained by the demonstration effect (greater inequality and therefore presence of higher incomes invites people to pitch their poverty lines higher). We calculate the Gini coefficient for per capita income for each region and for each survey (see Annex 3), and include it in the regression. However, we find no evidence that inequality influences the subjective poverty line.

[22] We introduced (time)^2 variable to check if the time effect may be subsiding as surveys progressed. It was found not significantly different from zero.

Section 4. Comparison of regional "subjective" and official poverty lines

We have already seen (see figure 3) that the subjective poverty line for an adult was several times higher than the official poverty line (*prozhitochnyi minimum*) for an adult although the gap between the two diminished. A different question is how the structure (rankings) of the regional—official and subjective—poverty lines differ. Table 2 shows the rouble amounts for the official and subjective regional poverty lines in 1996. As we would expect subjective poverty lines are always higher, but the extent of how much higher they are differs between the regions: the official poverty line is less than half of the official one in the North Caucasus, but is almost two-thirds of the subjective line in the North.

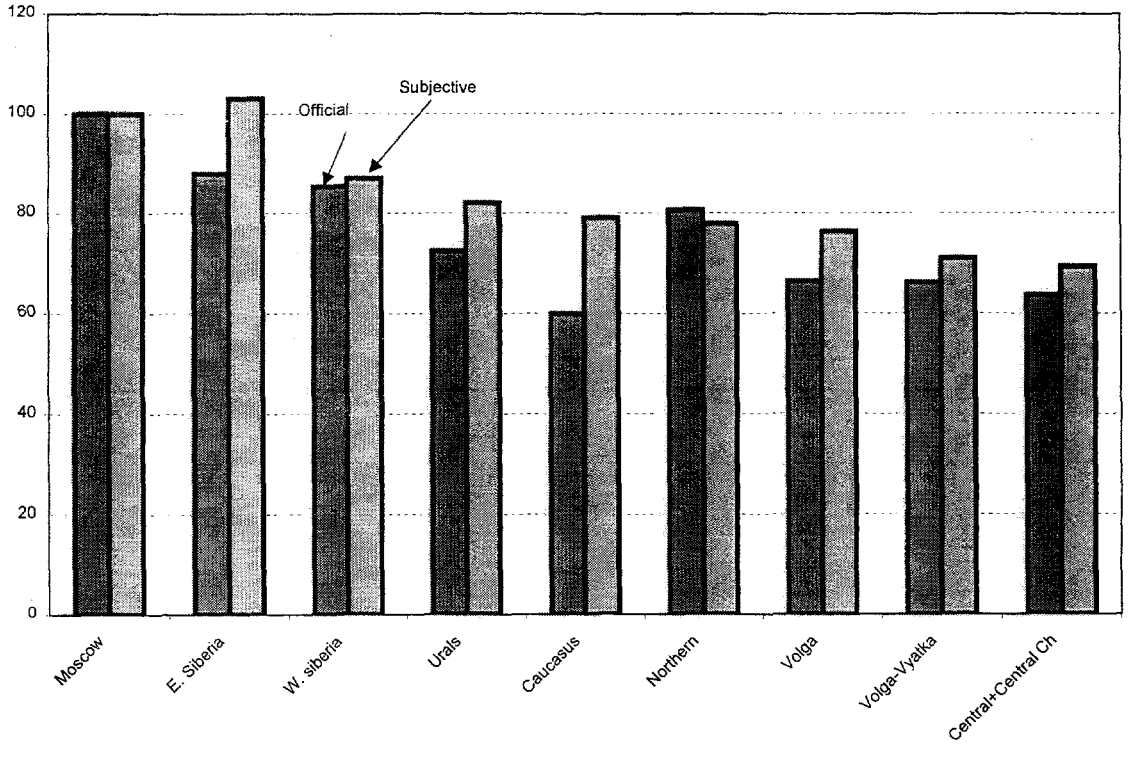
Table 2. Official and subjective regional poverty lines in 1996
(in 000 of March 1993 roubles)

Regions	(2) Official poverty line	(3) Subjective poverty line	Ratio (2):(3)
North	8.30	12.7	0.65
Central and Central Black Earth	6.55	11.3	0.58
North Caucasus	6.17	12.9	0.48
Volga-Vyatka	6.82	11.5	0.59
Volga	6.84	12.4	0.55
Urals	7.47	13.4	0.56
West Siberia	8.79	14.1	0.62
East Siberia and Far East	9.06	16.8	0.54
Moscow	10.3	16.3	0.63

Note: Official poverty lines calculated from Goskomstat Rossii (1997, Table 2.7 and Table 4.20). Subjective poverty lines calculated from variant 2 (Table 1 above). The subjective poverty lines cover the period January-September 1996.

The implication of these regional differences is that the official poverty lines do not accurately reflect population perception of the differences in subjective needs between the regions.[23] Figure 5 shows that if Moscow-city poverty lines, both subjective and official, are set at 100, *relative* subjective poverty line for all but one region (Northern Russia), are higher than the official. This suggests a pro-Moscow bias in setting of the official poverty lines. For example, the official poverty line for an adult in the Caucasus is 40 percent below that of Moscow; but the public perception of the minimum there is that it should be only 20 percent below the Moscow subjective poverty line (Figure 5).

Figure 5. Regional poverty lines: subjective and official (Moscow-city=100), year 1996



[23] This despite the fact that the correlation coefficient between the official and subjective poverty lines is 0.85.

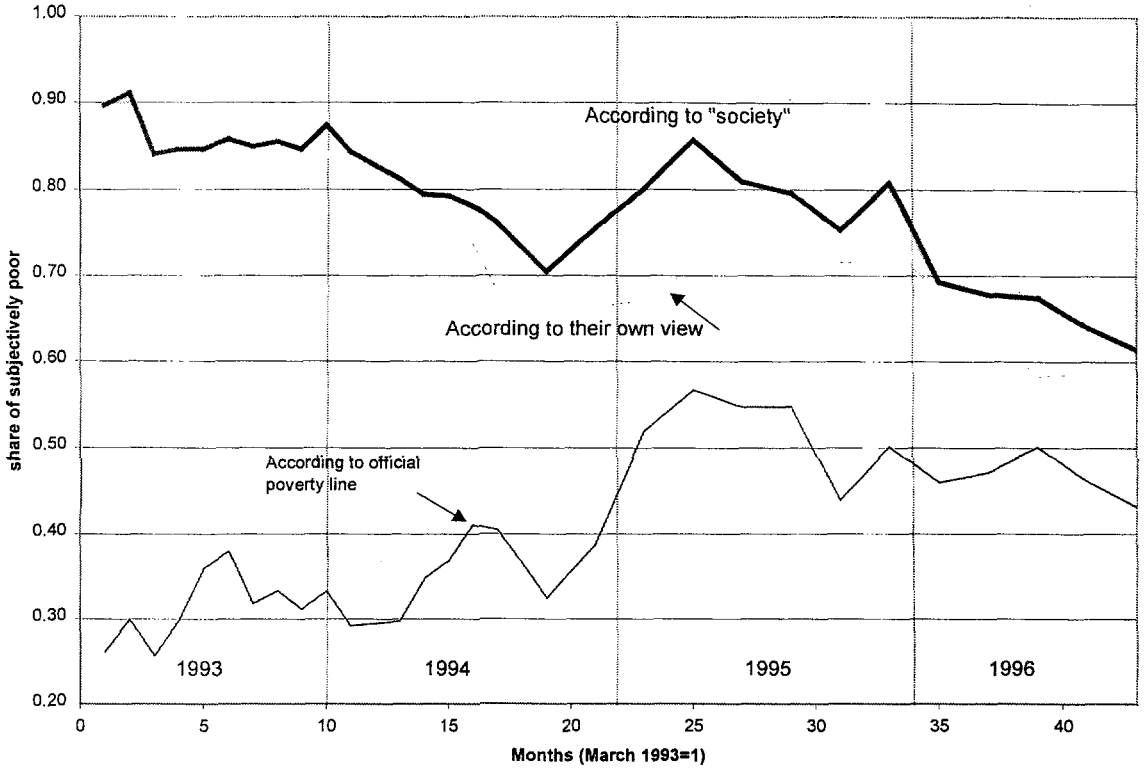
Section 5. How many people are poor?

In this section, we look at the proportion of the poor where "poor" are defined according to three criteria. The first criterion defines as "subjectively poor" those households that are poor according to their own assessment, that is households whose view of the minimum income for an adult is greater than their actual adult equivalent income ($AMY_f > Y^*_f$ for a given family). This criterion leads to inconsistencies, in the sense that two identical households with the same incomes may be classified as respectively poor and non-poor depending on how they perceive own wellbeing. Furthermore, we impose a "social" equivalence scale (θ=0.62) which may not correspond to the household own equivalence scale. This is why the second criterion, the "socially subjectively poor" is, as discussed in Section 1, used instead. This criterion defines as poor those households whose current income per equivalent adult (Y^*_f using θ=0.62) is less than the *social* subjective minimum income (per adult) for such a household predicted from the regression 3 (the variant with Huber-robust variances and excluding Hadi outliers). Finally, under the third criterion, the poor are those whose current income per equivalent adult (Y^*_f using θ=0.62) less than the official all-Russia poverty line (per working adult). Figure 6 shows the share of households who are poor according to the three criteria. We can make several conclusions.

First, an extremely high percentage of the population (almost always greater than 60 percent) is subjectively poor—whatever (subjective) criterion is used. This is consistently higher than the percentage of the poor according to the "objective" criterion of the official poverty line.

Second, there is a clear tendency for the "subjective" poverty headcounts to decrease with time. This is not surprising because we have already noted a sharp decrease in the subjective poverty line with the passage of time. As the subjective poverty line decreased faster than population real income, fewer people assessed themselves as poor. This explains how the percentage of the "socially" subjective poor went down from 90 percent of individuals in March 1993 to less than 60 percent at the time of the last Survey while real average per capita income decreased by 14 percent.

Figure 6. The share of the poor individuals in total population according to three concepts of poverty



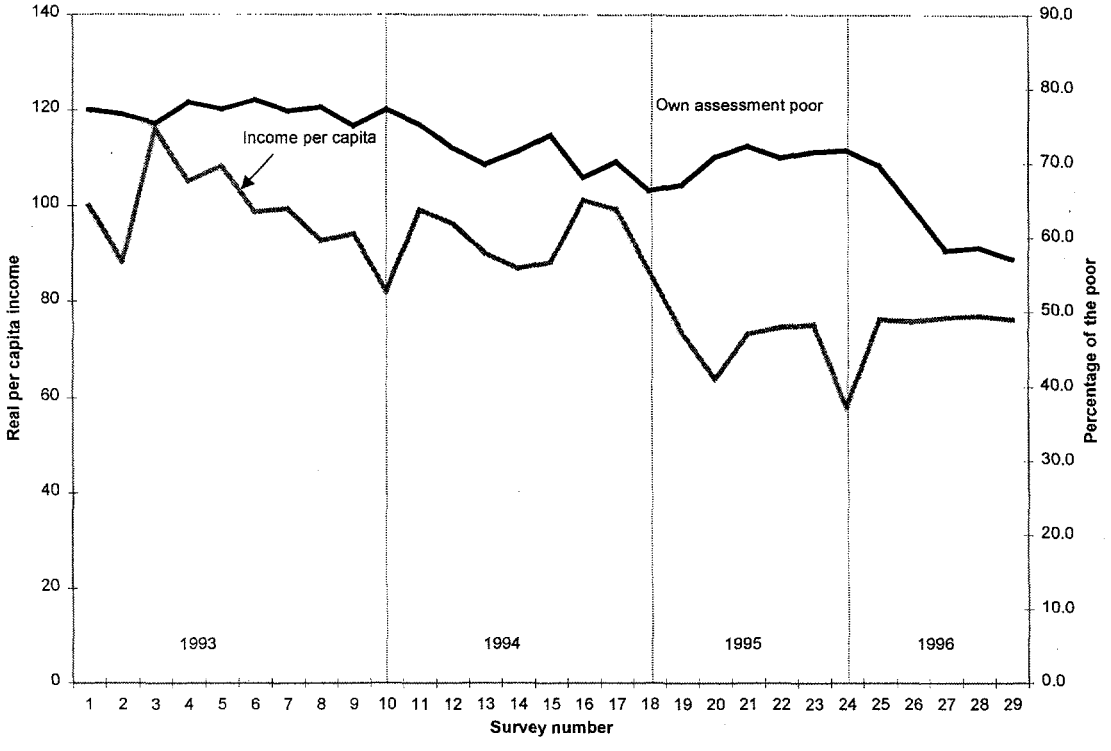
Note: All shares are individual-based.

Third, since real income declined while the official poverty line remained the same, the percentage of those with income less than the official poverty line increased from a third of the population in 1993 to more than one-half in 1995 before heading down toward 40 percent in the late 1996.[24] It is thus somewhat ironic that while the decrease in real income has made more people poor according to an "objective" and fixed yardstick, the same reduction in real incomes has reduced people's perception of the minimum income they need in order to survive and has made *fewer* of them *feel* poor. This is why the decrease in the percentage of the self-assessed poor coincided with the decline in real income (Figure 6). The decline in the percentage of the self-assessed poor decelerated only between mid-1994 and mid-1995 (surveys 16 to 24) when the current real income took a further sharp dip: it required a larger than usual *decrease* in real income for the percentage of the self-assessed poor to stay constant. One could say that there are two ways to make fewer people feel poor: to augment their real incomes fast or to *reduce* their

[24] This percentage may not be compared with the percentage of the poor from the official Goskomstat statistics that ranged between 22 and 31 percent over the same period (Goskomstat Rossii, 1998, p.79), or the percentage obtained from the Russian Living Standards Measurement Survey (see calculations by Jeanine Braithwaite in World Bank 1998, p. 5) because income in these cases is defined to include non-cash sources while VCIOM income includes only cash sources (see footnote 8 above).

incomes equally fast. In Russia, unfortunately, it was the second alternative that happened.

Figure 6. Real per capita income (March 1996=100) and the percent of self-assessed poor



Note: real per capita income calculated from VCIOM surveys.

Fourth, the use of the "social" subjective poverty line yields in all but two surveys higher poverty headcounts than own assessment (Figure 5). That means that some households that are "socially" considered poor, do not view themselves as such.[25] This, in turn, indicates that there are households who are located in the triangle OAB (Figure 1). They are to the left of the social poverty line (AB), and are thus "socially" poor. However, their own assessment of minimum income is less than their actual income. This may indicate the presence of the much-discussed pockets of social resilience and patience that are often associated with the Russian population.

[25] A caveat is in order there. Since we assume that all households have the social equivalence scale reflected in θ=0.62, it could well be that some households whom we classify as poor according to their own view, may in fact have a lower θ, and thus do not regard themselves as poor. The opposite classification mistake is possible with the non-poor households whose θ is greater than 0.62.

Conclusions

In the three-and-a-half years (March 1993 to September 1996) covered by the VCIOM surveys of the Russian population, real per capita income decreased by between 15 and 20 percent. This came on top of severe income contraction in 1991 and 1992. Thus, the Russian population experienced one of severest peacetime depressions in the 20th century. At the same time, income inequality substantially increased. What happened, under these rather exceptional conditions, to the public perception of minimum income needed to "make ends meet"? We would expect that the subjective poverty line would decrease too. Indeed, the time variable was found significant as each month lowered the subjective poverty line by 1.7 percent. Thus, after more than three years of depression, the public's perception of a minimum income for an adult to survive was about ½ of what it would have been with the *same* real income in the beginning of the period. Yet the cross-sectional "preference (income) drift" parameter was relatively low, at slightly less than 0.15: each percent of real income decrease would, on average, reduce public perception of the poverty line by 0.15 percent. Some of the "sluggishness" is due to the inclusion of the time variable—a mere passage of time amid seemingly never improving circumstances led the population to downscale its expectations. However, even after dropping the time variable, "income drift" remains low (0.23) in comparison to West European countries, where it ranges between 0.4 and 0.7. This seems to suggest a relative homogeneity of people's perception of the subjective poverty line (for an adult Russian). Those on the top of the income scale do not evaluate the minimum income needed to survive so much differently than the poor. This is in turn explicable by either (or both) the poverty line question formulation that implicitly addressed the needs of an adult, or relatively recent "explosion" of income inequality. The question formulation might have influenced the answers in the sense that the rich and the poor individuals might differ less when asked to assess how much an abstract person needs in order to survive than when asked how much they themselves need. The recent increase in inequality might mean that people who had more or less same incomes until only recently will not suddenly diverge very much in their perception of the poverty line.

We also find that subjective needs vary as function of the region. The poverty line is the highest in East Siberia and Far East, and Moscow city. The poverty line in other regions is less between 13 percent (West Siberia) and 30 percent (Central and Black Earth, and Volga-Vyatka) than in Moscow-city. These differences are smaller than the differences in the official regional poverty lines. This suggests the existence of a pro-Moscow bias in the setting of the official poverty lines.

A very high percentage of the population (always in excess of 60 percent) considered itself poor using the "social" subjective poverty line. The percentage of the subjectively poor tended to decline as the minimum income itself was reduced. We thus faced a somewhat unusual situation that the percentage of the subjectively poor decreased more or less in step with reduction in people's real income. Only larger than usual income decreases were "needed" to jolt the population—that is to keep the percentage of the poor unchanged. It is also noteworthy that the percentage of the self-assessed poor was always

lower than the percentage of the poor according to the "social" subjective poverty line. This suggests the presence of the pockets of the population who regarded own income as adequate, while, in the view of the public perception of the minimum income, they were deemed "poor." These last two findings—the decline in the percentage of the subjectively poor as real income went down, and the lower percentage of the self-assessed than "socially" subjective poor—suggest two mechanisms of adaptation to the worsening circumstances: (1) reduction of what people perceive to be a minimum income needed for survival, and (2) the existence of very modest (less demanding) pockets of the population.

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Annex 1. The construction of the income variables

The VCIOM data set contains a number of income variables that are measured on both individual and household level. Two reported income variables are individual: individual main income (*main_inc*) and individual income from the second job (*sj_inc*). Household (family) income components include family main job income (*mj_inc*), family income from the second job (*sj_inc2*), income from private sector activities, pensions, other social transfers, stipends, alimonies, income from financial papers, income from sale of self-produced goods, and other monetary income.

The total family income (*tot_inc*) variable is also included in the data set and it is supposed to be equal to the sum of family income components,. This however is rarely the case. In a number of cases, the *tot_inc* was reported missing although the income components were available. Also, in a number of cases even though all the income components were missing, the *tot_inc* took a positive value. Furthermore, there were inconsistencies in reported individual and family main income (i.e. between *main_inc* and *mj_inc*), as well as between individual and family second job variables (i.e. *sj_inc* and *sj_inc2*).

For that reason, we chose to recompute the total family income (variable *tot*) as a sum of family income components, that is as a sum of *mj_inc, sj_inc,* and income from private sector activities, pensions, benefits and subsidies, stipends, alimonies, income from financial papers, income from sale of self-produced goods, and other monetary income. This was done as follows:

- The individual main income variable before April 1994 (the number of survey, *n_survey*=13) corresponds to the variable *main_inc*, and to the variable *main_in2* thereafter (the two variables have same definition, only the name has been changed). Thus, for n_survey > 13, we replace the value of *main_inc* with *main_in2*. However, there is no data available for November 1995 since there was no question concerning the main income in that survey, and therefore we do not have observations on the main individual income for that survey.

- Family main income (*mj_inc*) and income from the second job (*sj_inc2*) variables are to be at least equal to the corresponding variables for the individual. Therefore, where the data on family income was missing or less than the individual income, we replace the value of the family income with the observation on individual income.

In cases where all the income components are missing, we replace our *tot* with VCIOM computed total income (*tot_inc*). Also, where *tot*<*tot_inc*, we take the value of *tot_inc*. Although the code book reports that "0" should be treated as a missing variable (NA), both true zero and missing responses seem to be coded as "0". We didn't attempt to distinguish between the two, since the efforts in that direction were unlikely to be fruitful.

Variable list:

lnyp: logarithm of poverty line, minimum real subsistence level per (adult) person in Russia

lnyf: Logarithm of total real computed family income;

lnfs Logarithm of family size

famsize1-5: Dummies for the family size;

age, age2: age and age square;

rd1-9: Regional dummies:
- rd1 - 1 if North
- rd2 - 1 if Central and Central Black Earth
- rd3 - 1 if North Caucasus
- rd4 - 1 if Volga-Vyatka
- rd5 - 1 if Volga region
- rd6 - 1 if Urals
- rd7 - 1 if West Siberia
- rd8 - 1 if East Siberia and Far East
- rd9 - 1 if Moscow-city;

shpen: Share of real pension in the real total income (to avoid large number of missing variables, we treat missing observations for pension as zero);

sizes1-4: Size of the settlement:
- sizes1 - settlements with the number of residents less than 100,000
- sizes2 - from 100,000 to 500,000
- sizes3 - from 500,000 to 1,000,000
- sizes4 - 1,000,000 and more;

educ1-9: Dummies for education groups:
- educ1 - primary and less than primary
- educ2 - incomplete secondary
- educ3 - complete secondary without a diploma
- educ4 - technical college and less than secondary
- educ5 - complete secondary with diploma
- educ6 - technical college plus secondary education
- educ7 - vocational college, secondary or vocational education
- educ8 - three to four years of university
- educ9 - university completed

ANNEX 2. MAIN DESCRIPTIVE STATISTICS BY SURVEY

Survey No	Year	Month	Share of women	Age	Education categories shares								
					educ1	educ2	educ3	educ4	educ5	educ6	educ7	educ8	educ9
1	93	March	0.5915	41.8213	0.0508	0.0759	0.0299	0.0460	0.1621	0.1013	0.2685	0.0324	0.2331
			(0.4916)	(14.7297)	(0.2196)	(0.2649)	(0.1704)	(0.2094)	(0.3686)	(0.3018)	(0.4433)	(0.1770)	(0.4229)
2	93	April	0.5761	40.6643	0.0507	0.0710	0.0294	0.0453	0.1649	0.0872	0.2896	0.0324	0.2296
			(0.4942)	(14.2567)	(0.2193)	(0.2569)	(0.1689)	(0.2079)	(0.3711)	(0.2822)	(0.4536)	(0.1770)	(0.4206)
3	93	May	0.6131	42.3319	0.0633	0.0810	0.0272	0.0436	0.1545	0.0899	0.2662	0.0323	0.2420
			(0.4871)	(15.2339)	(0.2436)	(0.2728)	(0.1627)	(0.2043)	(0.3614)	(0.2861)	(0.4420)	(0.1767)	(0.4284)
4	93	June	0.5984	42.5489	0.0553	0.0825	0.0223	0.0458	0.1529	0.0993	0.2737	0.0336	0.2346
			(0.4903)	(15.1403)	(0.2286)	(0.2752)	(0.1477)	(0.2090)	(0.3600)	(0.2992)	(0.4459)	(0.1802)	(0.4238)
5	93	July	0.5910	43.1350	0.0628	0.0806	0.0236	0.0449	0.1623	0.0973	0.2789	0.0348	0.2147
			(0.4917)	(15.6851)	(0.2426)	(0.2723)	(0.1518)	(0.2071)	(0.3688)	(0.2964)	(0.4485)	(0.1834)	(0.4107)
6	93	August	0.6063	43.0374	0.0689	0.0901	0.0272	0.0388	0.1525	0.1023	0.2721	0.0300	0.2180
			(0.4886)	(15.5084)	(0.2533)	(0.2864)	(0.1627)	(0.1932)	(0.3596)	(0.3031)	(0.4451)	(0.1707)	(0.4129)
7	93	September	0.6258	43.1405	0.0698	0.0863	0.0299	0.0461	0.1536	0.0938	0.2698	0.0310	0.2198
			(0.4840)	(15.7148)	(0.2549)	(0.2808)	(0.1703)	(0.2097)	(0.3606)	(0.2916)	(0.4439)	(0.1733)	(0.4141)
8	93	October	0.6064	43.5176	0.0603	0.0824	0.0293	0.0438	0.1513	0.0972	0.2862	0.0271	0.2225
			(0.4886)	(15.6267)	(0.2381)	(0.2749)	(0.1687)	(0.2047)	(0.3584)	(0.2962)	(0.4520)	(0.1623)	(0.4160)
9	93	November	0.6021	43.4772	0.0608	0.0773	0.0232	0.0456	0.1372	0.1157	0.2750	0.0325	0.2327
			(0.4895)	(15.7350)	(0.2389)	(0.2671)	(0.1507)	(0.2087)	(0.3441)	(0.3199)	(0.4466)	(0.1773)	(0.4226)
10	93	December	0.5937	43.2581	0.0663	0.0803	0.0272	0.0447	0.1443	0.0949	0.2772	0.0340	0.2311
			(0.4912)	(15.0242)	(0.2488)	(0.2718)	(0.1628)	(0.2066)	(0.3515)	(0.2931)	(0.4477)	(0.1812)	(0.4216)
11	94	January	0.5929	42.9043	0.0579	0.0819	0.0221	0.0414	0.1459	0.1062	0.2736	0.0292	0.2419
			(0.4914)	(15.1682)	(0.2336)	(0.2743)	(0.1469)	(0.1992)	(0.3530)	(0.3081)	(0.4459)	(0.1685)	(0.4283)
12	94	March	0.6022	42.3403	0.0479	0.0746	0.0244	0.0456	0.1469	0.1118	0.2828	0.0296	0.2364
			(0.4895)	(14.9660)	(0.2136)	(0.2628)	(0.1543)	(0.2086)	(0.3541)	(0.3152)	(0.4504)	(0.1696)	(0.4249)
13	94	April	0.6011	42.5154	0.0607	0.0809	0.0262	0.0453	0.1536	0.0970	0.2880	0.0270	0.2213
			(0.4898)	(15.2021)	(0.2388)	(0.2727)	(0.1598)	(0.2080)	(0.3606)	(0.2960)	(0.4529)	(0.1620)	(0.4152)
14	94	May	0.6079	42.2154	0.0631	0.0780	0.0267	0.0397	0.1511	0.0965	0.2926	0.0390	0.2131
			(0.4883)	(15.3441)	(0.2432)	(0.2682)	(0.1613)	(0.1954)	(0.3582)	(0.2954)	(0.4550)	(0.1936)	(0.4096)
15	94	June	0.5978	42.3962	0.0610	0.0960	0.0249	0.0339	0.1678	0.1057	0.2760	0.0327	0.2020
			(0.4904)	(15.2516)	(0.2394)	(0.2946)	(0.1559)	(0.1809)	(0.3737)	(0.3075)	(0.4471)	(0.1780)	(0.4016)
16	94	July	0.6137	42.3262	0.0661	0.0962	0.0282	0.0425	0.1451	0.1003	0.2867	0.0383	0.1965
			(0.4870)	(15.2821)	(0.2486)	(0.2949)	(0.1655)	(0.2017)	(0.3522)	(0.3005)	(0.4523)	(0.1920)	(0.3975)
17	94	September	0.5965	42.3863	0.0557	0.0744	0.0259	0.0374	0.1377	0.0992	0.2925	0.0351	0.2422
			(0.4907)	(15.1221)	(0.2294)	(0.2624)	(0.1590)	(0.1897)	(0.3446)	(0.2989)	(0.4550)	(0.1840)	(0.4285)
18	94	November	0.6002	41.9052	0.0584	0.0717	0.0300	0.0379	0.1434	0.0964	0.2777	0.0474	0.2371
			(0.4900)	(14.8391)	(0.2346)	(0.2580)	(0.1705)	(0.1911)	(0.3505)	(0.2951)	(0.4479)	(0.2126)	(0.4254)
19	95	January	0.5779	43.1631	0.0527	0.0876	0.0200	0.0388	0.1459	0.0943	0.2928	0.0355	0.2324
			(0.4940)	(15.2718)	(0.2235)	(0.2828)	(0.1399)	(0.1932)	(0.3531)	(0.2923)	(0.4552)	(0.1851)	(0.4225)
20	95	March	0.5479	42.3721	0.0685	0.1151	0.0197	0.0482	0.1529	0.0877	0.2800	0.0285	0.1995
			(0.4978)	(15.2843)	(0.2527)	(0.3192)	(0.1391)	(0.2143)	(0.3600)	(0.2829)	(0.4491)	(0.1664)	(0.3997)
21	95	May	0.5876	41.5867	0.0530	0.0777	0.0216	0.0382	0.1568	0.1078	0.2740	0.0368	0.2341
			(0.4924)	(15.5974)	(0.2241)	(0.2678)	(0.1453)	(0.1917)	(0.3637)	(0.3102)	(0.4461)	(0.1884)	(0.4235)
22	95	July	0.5631	42.5067	0.0568	0.0756	0.0215	0.0452	0.1713	0.1078	0.2639	0.0407	0.2174
			(0.4961)	(15.9238)	(0.2315)	(0.2644)	(0.1450)	(0.2077)	(0.3768)	(0.3102)	(0.4408)	(0.1976)	(0.4125)
23	95	September	0.5817	43.3585	0.0550	0.0932	0.0282	0.0392	0.1281	0.0870	0.2624	0.0516	0.2553
			(0.4934)	(15.8288)	(0.2280)	(0.2908)	(0.1656)	(0.1941)	(0.3343)	(0.2819)	(0.4401)	(0.2213)	(0.4361)
24	95	November	0.5610	42.6338	0.0643	0.0807	0.0269	0.0299	0.1525	0.1046	0.2715	0.0334	0.2362
			(0.4964)	(16.2003)	(0.2453)	(0.2725)	(0.1618)	(0.1703)	(0.3596)	(0.3062)	(0.4449)	(0.1797)	(0.4248)
25	96	January	0.5676	43.6697	0.0472	0.0886	0.0260	0.0443	0.1416	0.1030	0.2658	0.0433	0.2403
			(0.4955)	(15.3291)	(0.2121)	(0.2842)	(0.1592)	(0.2058)	(0.3487)	(0.3041)	(0.4418)	(0.2037)	(0.4273)
26	96	March	0.5624	43.3728	0.0469	0.0768	0.0240	0.0444	0.1372	0.0928	0.2854	0.0404	0.2520
			(0.4962)	(15.3953)	(0.2115)	(0.2664)	(0.1529)	(0.2061)	(0.3442)	(0.2902)	(0.4517)	(0.1970)	(0.4343)
27	96	May	0.5632	42.9498	0.0608	0.0878	0.0251	0.0569	0.1429	0.1100	0.2751	0.0323	0.2090
			(0.4961)	(15.7616)	(0.2390)	(0.2831)	(0.1565)	(0.2318)	(0.3500)	(0.3130)	(0.4467)	(0.1769)	(0.4067)
28	96	July	0.5605	43.8601	0.0640	0.0868	0.0232	0.0413	0.1389	0.1095	0.2617	0.0394	0.2352
			(0.4964)	(16.0662)	(0.2448)	(0.2816)	(0.1507)	(0.1989)	(0.3460)	(0.3124)	(0.4397)	(0.1945)	(0.4242)
29	96	September	0.5791	42.5874	0.0560	0.0874	0.0285	0.0354	0.1287	0.0987	0.2721	0.0398	0.2534
			(0.4938)	(15.4034)	(0.2300)	(0.2825)	(0.1664)	(0.1847)	(0.3349)	(0.2984)	(0.4452)	(0.1955)	(0.4351)

Education categories: educ1: primary and less than primary
educ2: incomplete secondary
educ3: complete secondary w/o a diploma
educ4: tech. college and less than 2ndary
educ5: complete secondary with a diploma
educ6: technical college and secondary
educ7: vocation college. secondary or vocational education
educ8: 3-4 years of university
educ9: university completed

ANNEX 2. MAIN DESCRIPTIVE STATISTICS BY QUARTER

					Education categories shares								
Survey No	Year	Month	Share of women	Age	educ1	educ2	educ3	educ4	educ5	educ6	educ7	educ8	educ9
1	93	q_1	0.5915	41.8213	0.0508	0.0759	0.0299	0.0460	0.1621	0.1013	0.2685	0.0324	0.2331
			(0.4916)	(14.7297)	(0.2196)	(0.2649)	(0.1704)	(0.2094)	(0.3686)	(0.3018)	(0.4433)	(0.1770)	(0.4229)
2-4	93	q_2	0.5960	41.8582	0.0564	0.0782	0.0262	0.0449	0.1574	0.0922	0.2764	0.0328	0.2354
			(0.4907)	(14.9096)	(0.2308)	(0.2686)	(0.1599)	(0.2071)	(0.3642)	(0.2894)	(0.4473)	(0.1780)	(0.4243)
5-7	93	q_3	0.6079	43.1043	0.0672	0.0857	0.0269	0.0433	0.1561	0.0978	0.2736	0.0319	0.2175
			(0.4883)	(15.6351)	(0.2504)	(0.2799)	(0.1619)	(0.2035)	(0.3630)	(0.2971)	(0.4458)	(0.1758)	(0.4126)
8-10	93	q_4	0.6007	43.4179	0.0624	0.0800	0.0266	0.0447	0.1443	0.1026	0.2794	0.0312	0.2288
			(0.4898)	(15.4647)	(0.2420)	(0.2713)	(0.1609)	(0.2067)	(0.3514)	(0.3034)	(0.4487)	(0.1738)	(0.4201)
11-12	94	q_1	0.5975	42.6296	0.0530	0.0784	0.0232	0.0434	0.1464	0.1089	0.2781	0.0294	0.2392
			(0.4904)	(15.0716)	(0.2241)	(0.2688)	(0.1505)	(0.2038)	(0.3535)	(0.3115)	(0.4481)	(0.1690)	(0.4266)
13-15	94	q_2	0.6023	42.3752	0.0616	0.0850	0.0260	0.0396	0.1575	0.0997	0.2856	0.0329	0.2121
			(0.4895)	(15.2648)	(0.2405)	(0.2788)	(0.1590)	(0.1951)	(0.3643)	(0.2997)	(0.4517)	(0.1784)	(0.4089)
16-17	94	q_3	0.6051	42.3560	0.0610	0.0854	0.0271	0.0399	0.1414	0.0998	0.2896	0.0367	0.2192
			(0.4889)	(15.2015)	(0.2393)	(0.2795)	(0.1623)	(0.1958)	(0.3485)	(0.2997)	(0.4536)	(0.1881)	(0.4137)
18	94	q_4	0.6002	41.9052	0.0584	0.0717	0.0300	0.0379	0.1434	0.0964	0.2777	0.0474	0.2371
			(0.4900)	(14.8391)	(0.2346)	(0.2580)	(0.1705)	(0.1911)	(0.3505)	(0.2951)	(0.4479)	(0.2126)	(0.4254)
19-20	95	q_1	0.5628	42.7652	0.0606	0.1014	0.0198	0.0436	0.1494	0.0910	0.2864	0.0320	0.2158
			(0.4961)	(15.2811)	(0.2387)	(0.3019)	(0.1395)	(0.2041)	(0.3565)	(0.2876)	(0.4521)	(0.1760)	(0.4114)
21	95	q_2	0.5876	41.5867	0.0530	0.0777	0.0216	0.0382	0.1568	0.1078	0.2740	0.0368	0.2341
			(0.4924)	(15.5974)	(0.2241)	(0.2678)	(0.1453)	(0.1917)	(0.3637)	(0.3102)	(0.4461)	(0.1884)	(0.4235)
22-23	95	q_3	0.5721	42.9184	0.0559	0.0841	0.0247	0.0423	0.1504	0.0977	0.2632	0.0460	0.2357
			(0.4948)	(15.8818)	(0.2298)	(0.2776)	(0.1553)	(0.2013)	(0.3575)	(0.2970)	(0.4404)	(0.2095)	(0.4245)
24	95	q_4	0.5610	42.6338	0.0643	0.0807	0.0269	0.0299	0.1525	0.1046	0.2715	0.0334	0.2362
			(0.4964)	(16.2003)	(0.2453)	(0.2725)	(0.1618)	(0.1703)	(0.3596)	(0.3062)	(0.4449)	(0.1797)	(0.4248)
25-26	96	q_1	0.5651	43.5239	0.0470	0.0828	0.0250	0.0444	0.1394	0.0980	0.2754	0.0419	0.2460
			(0.4958)	(15.3605)	(0.2118)	(0.2756)	(0.1561)	(0.2059)	(0.3464)	(0.2974)	(0.4468)	(0.2004)	(0.4307)
27-28	96	q_2	0.5618	43.4090	0.0624	0.0873	0.0242	0.0490	0.1409	0.1098	0.2684	0.0359	0.2222
			(0.4962)	(15.9206)	(0.2420)	(0.2823)	(0.1536)	(0.2160)	(0.3479)	(0.3127)	(0.4432)	(0.1860)	(0.4158)
29	96	q_3	0.5791	42.5874	0.0560	0.0874	0.0285	0.0354	0.1287	0.0987	0.2721	0.0398	0.2534
			(0.4938)	(15.4034)	(0.2300)	(0.2825)	(0.1664)	(0.1847)	(0.3349)	(0.2984)	(0.4452)	(0.1955)	(0.4351)
1-10	93		0.6006	42.7148	0.0610	0.0808	0.0269	0.0444	0.1534	0.0980	0.2757	0.0320	0.2277
			(0.4898)	(15.3037)	(0.2394)	(0.2726)	(0.1618)	(0.2061)	(0.3604)	(0.2973)	(0.4469)	(0.1760)	(0.4193)
11-18	94		0.6012	42.3951	0.0585	0.0815	0.0258	0.0407	0.1488	0.1022	0.2833	0.0344	0.2249
			(0.4897)	(15.1434)	(0.2346)	(0.2736)	(0.1586)	(0.1975)	(0.3559)	(0.3029)	(0.4506)	(0.1822)	(0.4175)
19-24	95		0.5704	42.5827	0.0582	0.0875	0.0231	0.0399	0.1516	0.0987	0.2734	0.0381	0.2296
			(0.4950)	(15.7123)	(0.2341)	(0.2826)	(0.1501)	(0.1957)	(0.3587)	(0.2983)	(0.4457)	(0.1914)	(0.4206)
25-29	96		0.5665	43.2921	0.0551	0.0856	0.0253	0.0445	0.1379	0.1029	0.2719	0.0390	0.2378
			(0.4956)	(15.6012)	(0.2281)	(0.2797)	(0.1572)	(0.2062)	(0.3448)	(0.3039)	(0.4450)	(0.1937)	(0.4258)

Education categories: educ1: primary and less than primary
educ2: incomplete secondary
educ3: complete secondary w/o a diploma
educ4: tech. college and less than 2ndary
educ5: complete secondary with a diploma
educ6: technical college and secondary
educ7: vocational college, secondary or vocational education
educ8: 3-4 years of university
educ9: university completed

ANNEX 3. INCOME, POVERTY LINE AND SOME STATISTICS BY SURVEY

Survey	Year	Month/	Total real family income			Per capita real family income			Subjective per adult poverty line			Size of	Children	Share of	Gini coeff.
No		Quarter	ottom quartile	all	top quartile	ottom quartile	all	top quartile	ottom quartile	all	top quartile	household	per household	pensions	(all Russia)
1	93	March	10.802	38.373	95.579	3.546	13.282	36.544		32.066		3.306	0.800	--	46.4
2	93	April	10.069	34.060	80.521	3.365	11.534	28.862		32.192		3.285	0.806	--	42.7
3	93	May	10.420	42.154	112.501	3.954	14.855	39.573		37.803		3.091	0.716	0.076	47.0
4	93	June	9.762	37.875	92.956	3.914	13.445	33.680		36.063		3.103	0.691	0.100	42.4
5	93	July	8.866	37.961	100.633	3.737	14.157	38.862		35.746		3.014	0.674	0.113	46.5
6	93	August	7.699	34.617	91.403	3.311	12.611	33.329		32.676		3.017	0.662	0.155	46.1
7	93	September	8.310	34.621	86.559	3.538	12.379	30.699		30.888		2.998	0.654	0.183	44.0
8	93	October	7.342	32.408	83.053	3.146	11.433	28.604		29.523		3.009	0.665	0.200	44.1
9	93	November	7.424	32.685	82.325	3.242	11.531	28.296		30.922		2.990	0.662	0.216	42.8
10	93	December	7.244	28.916	68.434	3.020	10.128	23.977		28.861		3.034	0.663	0.212	40.5
11	94	January	7.196	35.303	97.913	2.983	12.121	32.907		27.911		3.067	0.691	0.200	49.7
12	94	March	7.585	34.644	89.836	3.200	11.965	31.017		25.754		3.100	0.726	0.204	45.7
13	94	April	7.280	33.129	84.205	2.960	11.252	28.252		24.395		3.170	0.726	0.208	44.7
14	94	May	7.518	31.911	78.303	3.014	10.788	26.023		25.221		3.164	0.743	0.200	41.6
15	94	June	7.334	32.546	81.282	2.913	11.056	27.187		25.774		3.181	0.739	0.219	43.7
16	94	July	7.486	36.701	100.436	2.981	14.301	42.406		23.729		3.117	0.767	0.212	49.6
17	94	September	7.992	36.909	95.441	3.086	13.080	35.037		25.921		3.199	0.752	0.202	46.1
18	94	November	7.800	31.473	77.629	2.995	11.222	28.417		22.607		3.137	0.705	0.205	42.9
19	95	January	6.011	26.331	65.746	2.552	9.257	22.856		18.508		3.061	0.745	0.246	43.5
20	95	March	6.103	23.090	54.120	2.343	8.114	19.033		16.821		3.107	0.700	0.227	41.3
21	95	May	6.136	26.562	66.864	2.486	9.316	24.105		19.044		3.093	0.747	0.217	46.1
22	95	July	6.343	26.674	68.990	2.449	9.772	26.140		18.770		3.072	0.628	0.215	46.4
23	95	September	6.706	27.113	66.537	2.603	9.412	23.145		18.834		3.103	0.665	0.233	42.8
24	95	November	6.335	20.409	41.339	2.539	7.302	14.686		17.195		3.025	0.627	0.241	32.7
25	96	January	6.751	27.247	65.269	2.698	9.416	22.374		18.828		3.079	0.644	0.227	42.9
26	96	March	6.525	27.489	67.299	2.417	9.637	23.592		17.187		3.125	0.669	0.216	45.2
27	96	May	6.364	27.174	71.171	2.485	9.924	26.286		14.709		3.055	0.667	0.227	47.8
28	96	July	6.817	27.009	66.001	2.670	9.744	24.109		15.508		3.026	0.606	0.249	44.7
29	96	September	6.692	27.193	65.822	2.531	10.031	25.228		15.181		3.076	0.685	0.218	45.3
		Mean		31.468			11.140			26.245		3.097	0.697	0.201	44.3
1	93	q_1	10.802	38.373	95.579	3.546	13.282	36.544		32.066		3.306	0.800	--	46.4
2-4	93	q_2	9.965	38.034	95.020	3.695	13.281	34.312		35.365		3.159	0.736	0.089	44.0
5-7	93	q_3	8.184	35.716	92.481	3.542	13.040	34.480		33.079		3.010	0.663	0.151	45.6
8-10	93	q_4	7.228	31.339	78.191	3.097	11.032	27.013		29.769		3.011	0.663	0.209	42.5
11-12	94	q_1	7.422	34.982	94.632	3.083	12.045	31.999		26.860		3.083	0.708	0.202	47.7
13-15	94	q_2	7.361	32.527	81.533	2.937	11.031	27.272		25.132		3.172	0.736	0.209	43.4
16-17	94	q_3	7.630	36.804	97.148	3.030	13.695	38.782		24.817		3.158	0.760	0.207	47.8
18	94	q_4	7.800	31.473	77.629	2.995	11.222	28.417		22.607		3.137	0.705	0.205	42.9
19-20	95	q_1	6.061	24.701	60.649	2.426	8.682	21.153		17.659		3.084	0.721	0.236	42.4
21	95	q_2	6.136	26.562	66.864	2.486	9.316	24.105		19.044		3.093	0.747	0.217	46.1
22-23	95	q_3	6.311	26.886	68.166	2.531	9.598	24.628		18.801		3.087	0.646	0.224	44.6
24	95	q_4	6.335	20.409	41.339	2.539	7.302	14.686		17.195		3.025	0.627	0.241	32.7
25-26	96	q_1	6.604	27.366	66.137	2.558	9.524	22.846		18.022		3.102	0.656	0.221	44.1
27-28	96	q_2	6.505	27.091	69.085	2.593	9.833	25.323		15.112		3.040	0.636	0.238	46.2
29	96	q_3	6.692	27.193	65.822	2.531	10.031	25.228		15.181		3.076	0.685	0.218	45.3
		Mean		30.631			10.861			26.245		3.103	0.699	0.205	44.1
1-10	93		8.427	35.297	90.451	3.420	12.514	32.381		32.630477		3.082	0.698	0.158	44.6
11-18	94		7.449	34.141	88.933	3.021	11.975	31.485		25.301104		3.137	0.729	0.206	45.4
19-24	95		6.169	25.110	61.386	2.484	8.896	21.926		18.240928		3.077	0.682	0.229	41.4
25-29	96		6.610	27.220	68.443	2.555	9.750	24.523		16.279124		3.072	0.654	0.227	45.2
		Mean		30.442			10.784			26.245		3.092	0.691	0.205	44.2

Note: Per capita real family income is calculated using number of persons per household as weights.

ANNEX 4. REGIONAL GINI COEFFICIENTS (BY SURVEY)

Region\	1	2	3	4	5	6	7	8	9			coeff.
Survey	Northern	Central-Bl	Caucasus	Volga-Vya	Volga	Urals	W. Siberia	Far East	Moscow	st.deviat.	mean	of var
1	34.7	38.3	62.7	36.0	41.3	39.1	39.0	39.6	43.5	7.9	41.6	18.9
2	40.6	33.6	52.0	37.6	40.3	31.5	43.0	37.6	36.0	5.7	39.1	14.5
3	43.4	45.3	43.8	35.5	40.3	43.3	39.1	42.3	49.9	3.8	42.5	9.0
4	35.2	35.4	48.8	35.8	35.6	31.5	43.2	41.4	46.0	5.5	39.2	14.0
5	43.9	36.5	38.6	39.1	38.7	40.8	49.8	42.8	52.0	5.0	42.5	11.8
6	51.8	34.5	35.5	38.8	40.3	34.8	47.3	41.3	53.6	6.8	42.0	16.3
7	44.4	32.9	41.8	40.5	40.3	37.2	45.2	47.5	39.8	4.1	41.1	10.1
8	45.5	41.8	43.7	32.9	33.6	34.6	45.4	44.4	47.3	5.4	41.0	13.1
9	50.2	30.5	47.1	34.9	37.7	38.7	38.3	37.5	42.1	5.7	39.7	14.3
10	36.2	35.2	37.7	39.0	41.0	37.8	39.8	36.5	43.3	2.4	38.5	6.2
11	42.8	36.9	43.2	34.3	40.6	35.9	39.1	39.6	67.4	9.4	42.2	22.2
12	37.6	33.8	50.4	30.8	40.5	47.5	58.9	39.7	36.5	8.4	41.7	20.1
13	41.1	40.9	42.0	43.0	36.8	45.5	38.6	43.7	41.7	2.5	41.5	5.9
14	36.5	33.5	40.6	40.0	42.4	40.0	37.6	40.8	39.3	2.5	39.0	6.5
15	41.7	37.5	45.0	38.2	42.6	38.3	37.4	45.4	36.4	3.3	40.3	8.1
16	42.6	50.9	60.9	39.1	37.9	39.5	35.1	44.2	42.1	7.4	43.6	17.0
17	44.2	37.9	43.1	42.0	45.4	40.3	35.4	52.1	40.4	4.5	42.3	10.7
18	35.8	37.8	43.5	38.8	42.0	37.7	35.0	39.5	45.2	3.2	39.5	8.2
19	39.4	38.0	51.8	34.0	37.8	41.9	42.9	37.6	33.7	5.2	39.7	13.1
20	39.7	35.4	36.0	29.3	33.7	38.5	37.5	41.3	42.9	3.9	37.2	10.5
21	46.4	37.8	49.3	42.9	39.3	34.4	37.5	40.4	46.3	4.7	41.6	11.2
22	40.3	35.3	41.0	30.9	39.8	36.5	47.8	28.5	48.9	6.5	38.8	16.7
23	39.2	36.3	42.5	41.2	34.7	37.4	43.4	35.3	42.5	3.2	39.2	8.1
24	26.6	33.0	29.0	27.7	30.9	28.5	28.8	32.1	28.4	2.0	29.4	6.8
25	27.7	36.6	34.0	38.8	41.2	36.8	35.7	42.2	44.9	4.8	37.5	12.7
26	40.7	38.4	45.7	33.4	45.0	35.9	29.5	48.5	40.6	5.8	39.7	14.6
27	32.2	33.7	39.6	36.9	56.2	40.3	46.5	39.6	48.9	7.3	41.6	17.5
28	36.4	41.4	49.4	35.6	36.2	39.6	41.2	40.1	41.4	3.9	40.1	9.8
29	37.7	39.3	44.7	34.1	33.7	38.4	41.2	42.1	44.8	3.8	39.6	9.7

Annex 5. Regression results with cross section dummies

Dependent variable: ln subjective minimum income for an adult (AMY)				
	(1) Basic equation with Huber (robust) variances	(2) = (1) without Hadi outliers	(4) = (3) with Gini coefficient	
Ln family income 1/	0.139 (39.0)	0.127 (36.7)	0.123 (35.1)	
Age	0.016 (18.5)	0.017 (20.6)	0.018 (21.4)	
Age^2	-0.0002 (-23.9)	-0.0002 (-26.0)	-0.0002 (-26.9)	
Small towns and villages (population under 100,000)	-0.062 (-7.9)	-0.065 (-8.8)	-0.064 (-8.5)	
Towns (between 100,000 and ½ million)	0.066 (7.5)	0.577 (6.9)	0.058 (7.0)	
Medium size cities (between ½ and 1 million)	0.060 (5.7)	0.060 (6.0)	0.060 (6.0)	
Northern region	-0.243 (-24.1)	-0.221 (-23.4)	-0.222 (-23.5)	
Central and Black Earth	-0.330 (-29.4)	-0.309 (-29.1)	-0.311 (-29.3)	
North Caucasus	-0.225 (-18.3)	-0.211 (-18.0)	-0.214 (-18.4)	
Volga-Vyatka	-0.324 (-25.5)	-0.292 (-24.1)	-0.294 (-24.2)	
Volga	-0.257 (-21.8)	-0.238 (-21.3)	-0.241 (-21.6)	
Urals	-0.194 (-18.0)	-0.180 (-17.7)	-0.180 (-17.8)	
West Siberia	-0.147 (-12.4)	-0.128 (-11.4)	-0.130 (-11.6)	
East Siberia and Far East	0.034 (2.7)	0.027* (2.3)	0.029* (2.5)	
Gini coefficient			-0.033 (26.7)	
Survey 2	-0.003** (-0.2)	-0.006** (-0.4)	0.115 (7.5)	
Survey 3	0.116 (6.6)	0.085 (5.2)	0.065 (3.9)	
Survey 4	0.144	0.135	0.266	

	(8.5)	(8.5)	(18.8)	
5	0.123 (7.1)	0.097 (5.9)	0.093 (5.7)	
6	0.626 (3.7)	0.515 (3.2)	0.061 (3.8)	
7	0.026** (1.5)	0.012** (0.8)	0.091 (6.4)	
8	-0.014** (-0.8)	-0.033* (-2.1)	0.042 (2.8)	
9	-0.021** (-1.2)	-0.022** (-1.4)	0.097 (6.7)	
10	-0.060 (-3.5)	-0.057 (-3.6)	0.134 (9.8)	
11	-0.099 (-5.8)	-0.096 (-6.1)	-0.204 (-11.2)	
12	-0.122 (-7.4)	-0.116 (-7.4)	-0.093 (-6.1)	
13	-0.173 (-9.9)	-0.168 (-10.1)	-0.113 (-7.2)	
14	-0.123 (-7.0)	-0.122 (-7.3)	0.035* (2.3)	
15	-0.099 (-5.7)	-0.098 (-6.0)	-0.011** (-0.8)	
16	-0.195 (-11.1)	-0.199 (-11.9)	-0.302 (-16.1)	
17	-0.098 (-5.6)	-0.078 (-4.7)	-0.068 (-4.1)	
18	-0.249 (-14.0)	-0.236 (-13.8)	-0.122 (-7.9)	
19	-0.383 (-19.5)	-0.377 (-19.9)	-0.281 (-15.9)	
20	-0.455 (-24.5)	-0.444 (-24.8)	-0.278 (-17.3)	
21	-0.395 (-21.9)	-0.399 (-23.4)	-0.390 (-23.1)	
22	-0.393 (-21.9)	-0.390 (-23.0)	-0.393 (-23.2)	
23	-0.370 (-21.2)	-0.371 (-22.4)	-0.256 (-17.2)	
24	-0.445 (-24.9)	-0.447 (-26.5)	Dropped	
25	-0.391 (-22.4)	-0.386 (-23.3)	-0.274 (-18.4)	
26	-0.455 (-25.4)	-0.440 (-25.5)	-0.401 (-24.3)	
Survey 27	-0.638 (-35.6)	-0.640 (-38.1)	-0.686 (-38.9)	
28	-0.580	-0.585	-0.531	

	(-32.0)	(-34.2)	(-32.8)	
29	-0.615	-0.611	-0.575	
	(-33.7)	(-35.4)	(-34.5)	
Constant	2.774	2.720	1.204	
	(106.1)	(110.1)	(22.7)	
Sample size	79,595	76,965	76,965	
R^2	0.462	0.489	0.490	
F value	1661.1	1782.5	1745.7	

Note: t-values given in parentheses (under the coefficients). All coefficients are significant at the 1 percent level, except those with * which are significant at the 5 percent level, and ** =not significant.

For size of settlement, the omitted category is larger cities (population over 1 million). For the regions, the omitted variable is Moscow-city. 1/ Defined as $Y/N^{0.62}$.

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